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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,941	12/31/2001	Josh B. Mastronarde	42390P12919	8498

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EXAMINER
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THAI, TUAN V

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 06/16/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/038,941

Applicant(s)

MASTRONARDE ET AL.

Examiner

Tuan V. Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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**Part III DETAILED ACTION**

***Specification***

1. This action is responsive to communication filed on April 10, 2002. Claims 1-36 are presented for examination.

2. Applicant is reminded of the duty to fully disclose information under 37 CFR 1.56.

***Double Patenting***

3. The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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4. Claims 1-16 of allowed patent application # 10/033,440 contains every element of claims 1-36 of the instant application and as such anticipates claims 1-36 of the instant application.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). "

ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by Lewchuk et al. (USPN: 6,058,461); hereinafter Lewchuk.

As per claims 1 and 6; Lewchuk teaches the invention as claimed including a method and a memory arbiter for servicing data in a computer system comprising a memory area is taught as open page/priority storage 48 (e.g. see figure 2; column 8, lines 19-20); a memory controller coupled to the memory area is taught as memory controller 42 having a control unit 46 for receiving memory requests and corresponding priorities from a microprocessor (e.g. see figure 2; column 5, line 61 bridging column 6, line 22; also column 8, lines 54 et seq.); Lewchuk further discloses the lower priority request is interrupted to serve higher priority request (e.g. see column 6, lines 11 et seq.) and wherein the memory controller is configured to continue to service current lower priority requests for a predefined period if an incoming higher priority request is directed to a same page of memory as the current lower priority requests is taught by Lewchuk; for example, starting at column 6, lines 63 et seq.; Lewchuk discloses to interrupt a memory operation to perform a higher priority memory operation comprises inserting the beats for the higher priority memory operation between two of the beats/cycles out of the four cycles for the lower priority memory operation; therefore the lower priority is still allowed

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to perform at least for a predefined period of at least two cycles before service the higher priority requests; by these rationales, claims 1 and 6 are rejected.

As per claims 2 and 7, the same agent is inherently taught and designated as either microprocessor A or microprocessor B which initiates a read/write memory operation to transfer data from/to main memory 14 as the lower priority request during the predefined period (e.g. column 6, line 47 et seq. bridging column 7, line 11);

As per claims 3 and 8, Lewchuk discloses after at least two cycles/beats of the lower priority memory operation, the higher cycle can be initiated (e.g. see column 6, lines 63 et seq.);

As per claims 4 and 9, Lewchuk discloses the memory controller unit 46 is configured to eventually resume servicing any lower priority requests (in-progress memory operation) after the high priority request is processed (e.g. see column 8, lines 65-68);

As per claim 5, the further limitation of a counter being used to monitor the predefined period is embedded in the system of Lewchuk since to determine the number of beats/cycles (being disclosed as two (2) cycles in Lewchuk's invention, e.g. see column 6, lines 64 bridging column 7, line 1) for interrupting a memory operation to perform a higher memory operation, a counter must be utilized to carry-out such operation; by this rationale,

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claim 5 is rejected.

As per claims 10-14, they encompass the same scope of invention as to that of claims 1-4, the claims are therefore rejected for the same reason as being set forth above. In addition, the processor for initiating a higher and lower priority memory requests is taught as processors 10A,B (e.g. see figure 2, column 8, lines 11 and 38 et seq.).

***Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewchuck (USPN: 6,058,461).

As per claims 15-18; Lewchuck discloses the invention as claimed, detailed above with respect to claims 1-14; Lewchuck however does not particularly disclose a computer-readable medium of instructions to be implemented on a computer as being claimed in claims 15-18. However, one of ordinary skill in the art would have recognized that computer readable medium (i.e., floppy, cd-

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rom, etc.) carrying computer-executable instructions for implementing a method, because it would facilitate the transporting and installing of the method on other systems, is generally well-known in the art. For example, a copy of the Microsoft Windows operating system can be found on a cd-rom from which Windows can be installed onto other systems, which is a lot easier than running a long cable or hand typing the software onto another system. The examiner takes Official Notice of this teaching. Therefore, it would have been obvious to put Mattson's program on a computer readable medium, because it would facilitate the transporting, installing and implementing of Lewchuck's program on other systems.

9. Claims 19-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewchuck (USPN: 6,058,461) in view of Iizuka et al. (USPN:5,699,521), hereinafter Iizuka.

As per claims 19 and 24, Lewchuk teaches the invention as claimed including a method and a memory arbiter for servicing data in a computer system comprising a memory area is taught as open page/priority storage 48 (e.g. see figure 2; column 8, lines 19-20); a memory controller coupled to the memory area is taught as memory controller 42 having a control unit 46 for receiving memory requests and corresponding priorities from a microprocessor (e.g. see figure 2; column 5, line 61 bridging



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column 6, line 22; also column 8, lines 54 et seq.); Lewchuk; however does not particularly disclose the memory controller is configured to interrupt servicing of higher priority requests after a predefined number are processed to process lower priority requests for a predefined period of time. Iizuka, in his teaching of communication system and method, clearly discloses the missing elements that is known to be required in Lewchuk in order to arrive at Applicant's current invention wherein Iizuka discloses interrupting high priority servicing-data-request to allowing passing/servicing of nonpriority or low priority data request in order to prevent or keep the nonpriority or low priority data request from starvation (e.g. see column 11, lines 12-53). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the current invention was made to look into the invention of Iizuka in order to utilize the teaching of "interrupting the higher priority service to allow for servicing of the lower priority requests" for that of Lewchuk invention. In doing so, it would enhance system reliability, and allow for continuously/uninterrupted servicing of system requests; since Iizuka clearly teaches that it would prevent or keep the nonpriority/low priority data requests from starvation; therefore being advantageous.

As per claims 20 and 25, Lewchuk discloses wherein the memory controller is configured to redefine the status of the

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higher priority requests to a lower priority status after a predefined number are processed (e.g. see column 8, lines 61 et seq.);

As per claims 21-22 and 26-27, the reinstatement of the higher priority requests to its initial priority status after the lower priority request is processed, and resuming the service of higher priority requests after the predefined period expires is taught by the Lewchuk as being equivalent to the control unit 46 resume the in-progress memory operation after completing the memory operation (e.g. column 8, lines 65-68);

As per claim 23, see arguments with respect to claim 5, in addition, it should be noted that Iizuka also discloses a counter for monitoring the number of high priority requests as being equivalent to the upper limit numbers of continuous fetch times of the queues and the current number of continuous fetch times of the queues ***are used to count the number of continuous fetch times of the priority data with the current number of continuous fetch times*** (e.g. see column 11, lines 14 et seq.);

As per claims 28-32, they encompass the same scope of invention as to that of claims 19-23, the claims are therefore rejected for the same reason as being set forth above. In addition, the processor for initiating a higher and lower priority memory requests is taught as processors 10A,B (e.g. see figure 2, column 8, lines 11 and 38 et seq.).

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As per claims 33-36; the combination of Lewchuck and Iizuka disclose the invention as claimed, detailed above with respect to claims 19-32; Lewchuck and Iizuka however do not particularly disclose a computer-readable medium of instructions to be implemented on a computer as being claimed in claims 19-32. However, one of ordinary skill in the art would have recognized that computer readable medium (i.e., floppy, cd-rom, etc.) carrying computer-executable instructions for implementing a method, because it would facilitate the transporting and installing of the method on other systems, is generally well-known in the art. For example, a copy of the Microsoft Windows operating system can be found on a cd-rom from which Windows can be installed onto other systems, which is a lot easier than running a long cable or hand typing the software onto another system. The examiner takes Official Notice of this teaching. Therefore, it would have been obvious to put Mattson's program on a computer readable medium, because it would facilitate the transporting, installing and implementing of Lewchuck and Iizuka's program on other systems.

#### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier

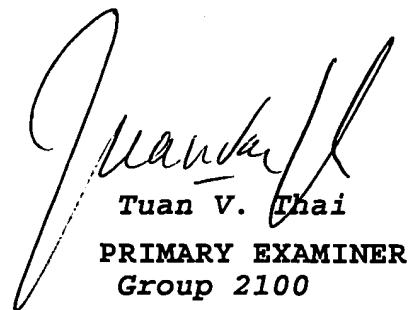
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communications from the examiner should be directed to Tuan V. Thai whose telephone number is (703) 305-3842. The examiner can normally be reached on from 6:30 A.M. to 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew M. Kim can be reached on (703)-305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVT/June 12, 2004



Tuan V. Thai  
PRIMARY EXAMINER  
Group 2100